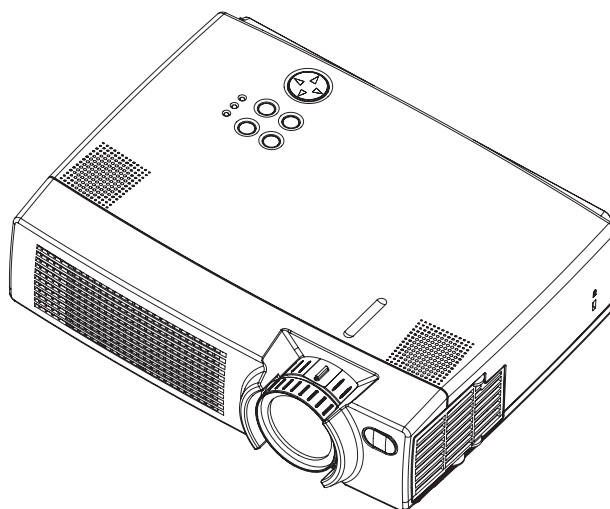
ViewSonic®

SERVICE MANUAL

PJ750-2

Caution

Be sure to read this manual before servicing. To assure safety from fire, electric shock, injury, harmful radiation and materials, various measures are provided in this Multimedia LCD Projector. Be sure to read cautionary items described in the manual to maintain safety before servicing.

Service Warning

1. When replace the lamp, to avoid burns to your fingers. The lamp becomes too hot.
2. Never touch the lamp bulb with a finger or anything else. Never drop it or give it a shock. They may cause bursting of the bulb.
3. This projector is provided with a high voltage circuit for the lamp. Do not touch the electric parts of power unit (main), when turn on the projector.
4. Do not touch the exhaust fan, during operation.
5. The LCD module assembly is likely to be damaged. If replacing to the LCD module assembly, do not hold the FPC of the LCD module assembly.
6. Use the cables which are included with the projector or specified.

Contents

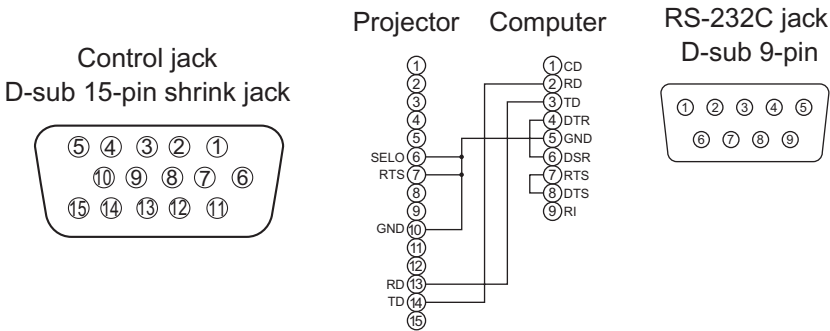
SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

Multimedia LCD Projector

March 2002

13. RS-232C communication

(1) Turn off the projector and computer power supplies and connect with the RS-232C cable.

(2) Turn on the computer power supply and, after the computer has started up, turn on the projector power supply.

Communications setting

19200bps, 8N1

1 Protocol

Consist of header (7 bytes) + command data (6 bytes).

2 Header

BE + EF + 03 + 06 + 00 + CRC_low + CRC_high.

CRC_low : Lower byte of CRC flag for command data.

CRC_high : Upper byte of CRC flag for command data.

3 Command data

Command data chart

byte_0	byte_1	byte_2	byte_3	byte_4	byte_5
Action		Type		Setting code	
low	high	low	high	low	high

Action (byte_0 - 1)

Action	Classification	Content
1	SET	Change setting to desired value.
2	GET	Read projector internal setup value.
4	INCREMENT	Increment setup value by 1.
5	DECREMENT	Decrement setup value by 1.
6	EXECUTE	Run a command.

Requesting projector status (Get command)

(1) Send the request code Header + Command data ('02H'+'00H'+ type (2 bytes) +'00H'+'00H') from the computer to the projector.

(2) The projector returns the response code '1DH'+ data (2 bytes) to the computer.

Changing the projector settings (Set command)

(1) Send the setting code Header + Command data ('01H'+'00H'+ type (2 bytes) + setting code (2 bytes)) from the computer to the projector.

(2) The projector changes the setting based on the above setting code.

(3) The projector returns the response code '06H' to the computer.

Using the projector default settings (Reset Command)

(1) The computer sends the default setting code Header + Command data ('06H'+'00H'+ type (2 bytes) +'00H'+'00H') to the projector.

(2) The projector changes the specified setting to the default value.

(3) The projector returns the response code '06H' to the computer.

Increasing the projector setting value (Increment command)

(1) The computer sends the increment code Header + Command data ('04H'+'00H'+ type (2 bytes) +'00H'+'00H') to the projector.

(2) The projector increases the setting value on the above setting code.

(3) The projector returns the response code '06H' to the computer.

Decreasing the projector setting value (Decrement command)

(1) The computer sends the decrement code Header + Command data ('05H'+'00H'+ type (2 bytes) +'00H'+'00H') to the projector.

(2) The projector decreases the setting value on the above setting code.

(3) The projector returns the response code '06H' to the computer.

When a command sent by the projector cannot be understood by the computer

When the command sent by the projector cannot be understood, the error command '15H' is returned by the computer. Some times, the projector ignores RS-232C commands during other works. If the error command '15H' is returned, please send the same command again.

When data sent by the projector cannot be practice

When the command sent by the projector cannot be practiced, the error code '1cH' +'xxxxH' is returned.

When the data length is greater than indicated by the data length code, the projector will ignore the excess data code.

Conversely, when the data length is shorter than indicated by the data length code, an error code will be returned to the projector.

NOTE:

- Operation cannot be guaranteed when the projector receives an undefined command or data.
- Provide an interval of at least 40ms between the response code and any other code.
- The projector outputs test data when the power supply is switched ON, and when the lamp is lit. Ignore this data.
- Commands are not accepted during warm-up.

Command data chart

Names	Operation type		Header	CRC	Action	Type	Setting code
					Command data		
Blank Color	Set	Red	BE EF 03 06 00	3B D3	01 00	00 30	00 00
		Orange	BE EF 03 06 00	AB D2	01 00	00 30	01 00
		Green	BE EF 03 06 00	5B D2	01 00	00 30	02 00
		Blue	BE EF 03 06 00	CB D3	01 00	00 30	03 00
		Purple	BE EF 03 06 00	FB D1	01 00	00 30	04 00
		White	BE EF 03 06 00	6B D0	01 00	00 30	05 00
		Black	BE EF 03 06 00	9B D0	01 00	00 30	06 00
	Get		BE EF 03 06 00	08 D3	02 00	00 30	00 00
Mirror	Set	Normal	BE EF 03 06 00	C7 D2	01 00	01 30	00 00
		H Inverse	BE EF 03 06 00	57 D3	01 00	01 30	01 00
		V Inverse	BE EF 03 06 00	A7 D3	01 00	01 30	02 00
		H&V Inverse	BE EF 03 06 00	37 D2	01 00	01 30	03 00
	Get		BE EF 03 06 00	F4 D2	02 00	01 30	00 00
Freeze	Set	Normal	BE EF 03 06 00	83 D2	01 00	02 30	00 00
		Freeze	BE EF 03 06 00	13 D3	01 00	02 30	01 00
	Get		BE EF 03 06 00	B0 D2	02 00	02 30	00 00
Menu Color	Set	Red	BE EF 03 06 00	7F D3	01 00	03 30	00 00
		Orange	BE EF 03 06 00	EF D2	01 00	03 30	01 00
		Green	BE EF 03 06 00	1F D2	01 00	03 30	02 00
		Blue	BE EF 03 06 00	8F D3	01 00	03 30	03 00
		Purple	BE EF 03 06 00	BF D1	01 00	03 30	04 00
		Transparent	BE EF 03 06 00	2F D0	01 00	03 30	05 00
		Gray	BE EF 03 06 00	DF D0	01 00	03 30	06 00
	Get		BE EF 03 06 00	4C D3	02 00	03 30	00 00
Startup	Set	Turn ON	BE EF 03 06 00	0B D2	01 00	04 30	00 00
		Turn OFF	BE EF 03 06 00	9B D3	01 00	04 30	01 00
	Get		BE EF 03 06 00	38 D2	02 00	04 30	00 00
Language	Set	English	BE EF 03 06 00	F7 D3	01 00	05 30	00 00
		Français	BE EF 03 06 00	67 D2	01 00	05 30	01 00
		Deutsch	BE EF 03 06 00	97 D2	01 00	05 30	02 00
		Español	BE EF 03 06 00	07 D3	01 00	05 30	03 00
		Italiano	BE EF 03 06 00	37 D1	01 00	05 30	04 00
		Norsk	BE EF 03 06 00	A7 D0	01 00	05 30	05 00
		Nederlands	BE EF 03 06 00	57 D0	01 00	05 30	06 00
		Português	BE EF 03 06 00	C7 D1	01 00	05 30	07 00
		Japanese	BE EF 03 06 00	37 D4	01 00	05 30	08 00
	Get		BE EF 03 06 00	C4 D3	02 00	05 30	00 00

Command data chart

Names	Operation type		Header	Command data			
				CRC	Action	Type	Setting code
Magnify	Get		BE EF 03 06 00	7C D2	02 00	07 30	00 00
	Increment		BE EF 03 06 00	1A D2	04 00	07 30	00 00
	Decrement		BE EF 03 06 00	CB D3	05 00	07 30	00 00
Auto off	Get		BE EF 03 06 00	08 86	02 00	10 31	00 00
	Increment		BE EF 03 06 00	6E 86	04 00	10 31	00 00
	Decrement		BE EF 03 06 00	BF 87	05 00	10 31	00 00
Brightness Reset	Execute		BE EF 03 06 00	58 D3	06 00	00 70	00 00
Contrast Reset	Execute		BE EF 03 06 00	A4 D2	06 00	01 70	00 00
V.Position Reset	Execute		BE EF 03 06 00	E0 D2	06 00	02 70	00 00
H.Position Reset	Execute		BE EF 03 06 00	IC D3	06 00	03 70	00 00
H.Size Reset	Execute		BE EF 03 06 00	68 D2	06 00	04 70	00 00
Color Balance R Reset	Execute		BE EF 03 06 00	94 D3	06 00	05 70	00 00
Color Balance B Reset	Execute		BE EF 03 06 00	D0 D3	06 00	06 70	00 00
Sharpness Reset	Execute		BE EF 03 06 00	C4 D0	06 00	09 70	00 00
Color Reset	Execute		BE EF 03 06 00	80 D0	06 00	0A 70	00 00
Tint Reset	Execute		BE EF 03 06 00	7C D1	06 00	0B 70	00 00
Keystone_V Reset	Execute		BE EF 03 06 00	08 D0	06 00	0C 70	00 00
Auto	Execute		BE EF 03 06 00	91 D0	06 00	0A 20	00 00
Blank on/off	Set	off	BE EF 03 06 00	FB D8	01 00	20 30	00 00
		on	BE EF 03 06 00	6B D9	01 00	20 30	01 00
	Get		BE EF 03 06 00	C8 D8	02 00	20 30	00 00
Error Status	Get		BE EF 03 06 00	D9 D8	02 00	20 60	00 00
			(Example of Return) 00 00 (Normal) 01 00 (Cover-error) 02 00 (Fan-error) 03 00 (Lamp-error) 04 00 (Temp-error) 05 00 (Air flow-error) 06 00 (Lamp-Time-over)				
Power	Set	OFF	BE EF 03 06 00	2A D3	01 00	00 60	00 00
		ON	BE EF 03 06 00	BA D2	01 00	00 60	01 00
	Get		BE EF 03 06 00	19 D3	02 00	00 60	00 00
Input Source	Set	RGB1	BE EF 03 06 00	FE D2	01 00	00 20	00 00
		RGB2	BE EF 03 06 00	3E D0	01 00	00 20	04 00
		Video	BE EF 03 06 00	6E D3	01 00	00 20	01 00
		SVideo	BE EF 03 06 00	9E D3	01 00	00 20	02 00
		Component	BE EF 03 06 00	AE D1	01 00	00 20	05 00
	Get		BE EF 03 06 00	CD D2	02 00	00 20	00 00
Volume	Get		BE EF 03 06 00	31 D3	02 00	01 20	00 00
	Increment		BE EF 03 06 00	57 D3	04 00	01 20	00 00
	Decrement		BE EF 03 06 00	86 D2	05 00	01 20	00 00

Command data chart

Names	Operation type		Header		Command data		
				CRC	Action	Type	Setting code
Mute	Set	Normal	BE EF 03 06 00	46 D3	01 00	02 20	00 00
		Mute	BE EF 03 06 00	D6 D2	01 00	02 20	01 00
	Get		BE EF 03 06 00	75 D3	02 00	02 20	00 00
Brightness	Get		BE EF 03 06 00	89 D2	02 00	03 20	00 00
	Increment		BE EF 03 06 00	EF D2	04 00	03 20	00 00
	Decrement		BE EF 03 06 00	3E D3	05 00	03 20	00 00
Contrast	Get		BE EF 03 06 00	FD D3	02 00	04 20	00 00
	Increment		BE EF 03 06 00	9B D3	04 00	04 20	00 00
	Decrement		BE EF 03 06 00	4A D2	05 00	04 20	00 00
Color Balance R	Get		BE EF 03 06 00	01 D2	02 00	05 20	00 00
	Increment		BE EF 03 06 00	67 D2	04 00	05 20	00 00
	Decrement		BE EF 03 06 00	B6 D3	05 00	05 20	00 00
Color Balance B	Get		BE EF 03 06 00	45 D2	02 00	06 20	00 00
	Increment		BE EF 03 06 00	23 D2	04 00	06 20	00 00
	Decrement		BE EF 03 06 00	F2 D3	05 00	06 20	00 00
Keystone_V	Get		BE EF 03 06 00	B9 D3	02 00	07 20	00 00
	Increment		BE EF 03 06 00	DF D3	04 00	07 20	00 00
	Decrement		BE EF 03 06 00	0E D2	05 00	07 20	00 00
Aspect	Set	4:3, Full	BE EF 03 06 00	9E D0	01 00	08 20	00 00
		16:9	BE EF 03 06 00	0E D1	01 00	08 20	01 00
		Small	BE EF 03 06 00	FE D1	01 00	08 20	02 00
	Get		BE EF 03 06 00	AD D0	02 00	08 20	00 00
Display Position at 16 : 9 or Small	Set	Default	BE EF 03 06 00	62 D1	01 00	09 20	00 00
		Bottom	BE EF 03 06 00	F2 D0	01 00	09 20	01 00
		Top	BE EF 03 06 00	02 D0	01 00	09 20	02 00
	Get		BE EF 03 06 00	51 D1	02 00	09 20	00 00
V.Position	Get		BE EF 03 06 00	0D 83	02 00	00 21	00 00
	Increment		BE EF 03 06 00	6B 83	04 00	00 21	00 00
	Decrement		BE EF 03 06 00	BA 82	05 00	00 21	00 00
H.Position	Get		BE EF 03 06 00	F1 82	02 00	01 21	00 00
	Increment		BE EF 03 06 00	97 82	04 00	01 21	00 00
	Decrement		BE EF 03 06 00	46 83	05 00	01 21	00 00
H.Size	Get		BE EF 03 06 00	B5 82	02 00	02 21	00 00
	Increment		BE EF 03 06 00	D3 82	04 00	02 21	00 00
	Decrement		BE EF 03 06 00	02 83	05 00	02 21	00 00
H.Phase	Get		BE EF 03 06 00	49 83	02 00	03 21	00 00
	Increment		BE EF 03 06 00	2F 83	04 00	03 21	00 00
	Decrement		BE EF 03 06 00	FE 82	05 00	03 21	00 00

Command data chart

Names	Operation type		Header	CRC	Action	Type	Setting code
					Command data		
Sharpness	Get		BE EF 03 06 00	F1 72	02 00	01 22	00 00
	Increment		BE EF 03 06 00	97 72	04 00	01 22	00 00
	Decrement		BE EF 03 06 00	46 73	05 00	01 22	00 00
Color	Get		BE EF 03 06 00	B5 72	02 00	02 22	00 00
	Increment		BE EF 03 06 00	D3 72	04 00	02 22	00 00
	Decrement		BE EF 03 06 00	02 73	05 00	02 22	00 00
Tint	Get		BE EF 03 06 00	49 73	02 00	03 22	00 00
	Increment		BE EF 03 06 00	2F 73	04 00	03 22	00 00
	Decrement		BE EF 03 06 00	FE 72	05 00	03 22	00 00
Video Format	Set	Auto	BE EF 03 06 00	9E 75	01 00	00 22	0A 00
		NTSC	BE EF 03 06 00	FE 71	01 00	00 22	04 00
		PAL	BE EF 03 06 00	6E 70	01 00	00 22	05 00
		SECAM	BE EF 03 06 00	6E 75	01 00	00 22	09 00
		NTSC 4.43	BE EF 03 06 00	5E 72	01 00	00 22	02 00
		M-PAL	BE EF 03 06 00	FE 74	01 00	00 22	08 00
		N-PAL	BE EF 03 06 00	0E 71	01 00	00 22	07 00
	Get		BE EF 03 06 00	0D 73	02 00	00 22	00 00
HDTV	Set	1080i	BE EF 03 06 00	F2 73	01 00	05 22	00 00
		1035i	BE EF 03 06 00	62 72	01 00	05 22	01 00
	Get		BE EF 03 06 00	C1 73	02 00	05 22	00 00

Command data chart

Names	Operation type		Header			CRC	Action	Type	Setting code
							Command data		
Sync on G	Set	off	BE EF	03	06 00	CB D0	01 00	08 30	01 00
		on	BE EF	03	06 00	5B D1	01 00	08 30	00 00
	Get		BE EF	03	06 00	68 D1	02 00	08 30	00 00
WHISPER	Set	NORMAL	BE EF	03	06 00	3B 23	01 00	00 33	00 00
		WHISPER	BE EF	03	06 00	AB 22	01 00	00 33	01 00
	Get		BE EF	03	06 00	08 23	02 00	00 33	00 00
GAMMA	Set	NORMAL	BE EF	03	06 00	C7 F0	01 00	A1 30	00 00
		CINEMA	BE EF	03	06 00	57 F1	01 00	A1 30	01 00
		DYNAMIC	BE EF	03	06 00	A7 F1	01 00	A1 30	02 00
	Get		BE EF	03	06 00	F4 F0	02 00	A1 30	00 00
COLOR TEMP	Set	NORMAL	BE EF	03	06 00	FB F5	01 00	B0 30	00 00
		LOW	BE EF	03	06 00	6B F4	01 00	B0 30	01 00
	Get		BE EF	03	06 00	C8 F5	02 00	B0 30	00 00